

## PATENT COOPERATION TREATY

PCT/AT2004/000160

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

Date of mailing (day/month/year)  
27 April 2006 (27.04.2006)

To:

SONN & PARTNER  
Riemergasse 14  
A-1010 Wien  
AUTRICHE



Applicant's or agent's file reference R 43209	<b>IMPORTANT NOTIFICATION</b>
International application No. PCT/AT2004/000160	International filing date (day/month/year) 10 May 2004 (10.05.2004)
Applicant FRONIUS INTERNATIONAL GMBH et al	

**1. Transmittal of the translation to the applicant.**

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

**2. Transmittal of the copy of the translation to the designated or elected Offices.**

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

**3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).**

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Yolaine Cussac

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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference <b>R 43209</b>	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. <b>PCT/AT2004/000160</b>	International filing date ( <i>day/month/year</i> ) <b>10 May 2004 (10.05.2004)</b>	Priority date ( <i>day/month/year</i> ) <b>13 May 2003 (13.05.2003)</b>	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant <b>FRONIUS INTERNATIONAL GMBH</b>			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis. I(a).

2. This REPORT consists of a total of 15 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input checked="" type="checkbox"/>	Box No. II	Priority
<input checked="" type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input checked="" type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

Date of issuance of this report <b>18 April 2006 (18.04.2006)</b>	
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer <b>Yolaine Cussac</b>
Facsimile No. +41 22 740 14 35	Telephone No. +41 22 338 70 80

**PATENT COOPERATION TREATY**

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

**PCT**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

		Date of mailing (day/month/year)
Applicant's or agent's file reference <b>R 43209</b>		<b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. <b>PCT/AT2004/000160</b>	International filing date (day/month/year) <b>10.05.2004</b>	Priority date (day/month/year) <b>13.05.2003</b>
International Patent Classification (IPC) or both national classification and IPC		
Applicant <b>FRONIUS INTERNATIONAL GMBH</b>		

**1. This opinion contains indications relating to the following items:**

<input checked="" type="checkbox"/>	Box No. I	Basis of the opinion
<input checked="" type="checkbox"/>	Box No. II	Priority
<input checked="" type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input checked="" type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I	Basis of this opinion
<p>1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input type="checkbox"/> This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).</p> <p>2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:</p> <p>a. type of material</p> <p><input type="checkbox"/> a sequence listing</p> <p><input type="checkbox"/> table(s) related to the sequence listing</p> <p>b. format of material</p> <p><input type="checkbox"/> in written format</p> <p><input type="checkbox"/> in computer readable form</p> <p>c. time of filing/furnishing</p> <p><input type="checkbox"/> contained in the international application as filed.</p> <p><input type="checkbox"/> filed together with the international application in computer readable form.</p> <p><input type="checkbox"/> furnished subsequently to this Authority for the purposes of search.</p> <p>3. <input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.</p> <p>4. Additional comments:</p>	

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Box No. II Priority

1.  The following document has not yet been furnished:  
 copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).  
 translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).  
Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
2.  This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

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Box No. III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

the entire international application  
 claims Nos. \_\_\_\_\_

because:

the said international application, or the said claims Nos. \_\_\_\_\_ relate to the following subject matter which does not require an international preliminary examination (*specify*):

III.1 Since it is not permitted to combine preceding claims in a reference with one another (PCT Rule 6(4) (a)), the expression "or more" included in claims 4 (first invention) and 9-13 and 16-18 (second invention) should be deleted.

the description, claims or drawings (*indicate particular elements below*) or said claims Nos. \_\_\_\_\_ are so unclear that no meaningful opinion could be formed (*specify*):

the claims, or said claims Nos. \_\_\_\_\_ are so inadequately supported by the description that no meaningful opinion could be formed.

no international search report has been established for said claims Nos. \_\_\_\_\_

the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

has not been furnished  
 does not comply with the standard

the computer readable form

has not been furnished  
 does not comply with the standard

the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

See Supplemental Box for further details.

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Box No. IV Lack of unity of invention

1.  In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:  
 paid additional fees  
 paid additional fees under protest  
 not paid additional fees
2.  This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is  
 complied with  
 not complied with for the following reasons:

See supplemental sheet

4. Consequently, this opinion has been established in respect of the following parts of the international application:

all parts  
 the parts relating to claims Nos. \_\_\_\_\_

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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																									
<p>1. Statement</p> <table> <tr> <td>Novelty (N)</td> <td>Claims</td> <td>3, 15</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td>1, 2, 4-14, 16-18</td> <td>NO</td> </tr> <tr> <td>Inventive step (IS)</td> <td>Claims</td> <td></td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td>1-18</td> <td>NO</td> </tr> <tr> <td>Industrial applicability (IA)</td> <td>Claims</td> <td>1-18</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td>NO</td> </tr> </table>			Novelty (N)	Claims	3, 15	YES		Claims	1, 2, 4-14, 16-18	NO	Inventive step (IS)	Claims		YES		Claims	1-18	NO	Industrial applicability (IA)	Claims	1-18	YES		Claims		NO
Novelty (N)	Claims	3, 15	YES																							
	Claims	1, 2, 4-14, 16-18	NO																							
Inventive step (IS)	Claims		YES																							
	Claims	1-18	NO																							
Industrial applicability (IA)	Claims	1-18	YES																							
	Claims		NO																							
<p>2. Citations and explanations:</p> <p>V.1 Cited documents</p> <p>The present opinion makes reference to the following documents:</p> <p>D1: US-A-5 618 456 (C-J KIM) 8 April 1997 (1997-04-08)</p> <p>D2: DE 15 21 918 A (R. PECK) 11 December 1969 (1969-12-11)</p> <p>D3: DE 195 07 472 A (ELECTRO CHEM ENG GMBH) 5 September 1996 (1996-09-05)</p> <p>D4: US-A-5 714 052 (S. HOVELING <i>ET AL.</i>) 3 February 1998 (1998-02-03)</p> <p>D5: US-A-3 497 401 (C.K. HANSON <i>ET AL.</i>) 24 February 1970 (1970-02-24)</p> <p>D6: US-A 5 983 434 (M.L. EICHINGER <i>ET AL.</i>) 16 November 1999 (1999-11-16)</p> <p>D7: US-B-6 413 2871 (L.L. BARBER JR) 2 July 2002 (2002-07-02)</p> <p>D8: US-A-5 903 951 (R. IONTA <i>ET AL.</i>) 18 May 1999 (1999-05-18)</p> <p>D9: US-A-4 367 389 (K. INOUE) 4 January 1983 (1983-01-04)</p>																										

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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	
<p>D10: US-A-4 945 687 (SCHEIDER ALFRED F ET AL.)  7 August 1990 (1990-08-07)</p> <p>D11: PATENT ABSTRACTS OF JAPAN Vol. 0081, No. 80  (M-318), 18 August 1984 (1984-08-18) &amp;  JP 59 073186 A (HITACHI SEISAKUSHO KK),  25 April 1984 (1984-04-25)</p>		
<p>V.2 First invention, i.e. claims 1-4</p> <p>V.2.1 The present application does not meet the requirements of PCT Article 33(1), because the subject matter of claim 1 is not novel within the meaning of PCT Article 33(2).</p> <p>Document D1 discloses (the references in parentheses relate to said document) a gas nozzle in accordance with the preamble of claim 1. Furthermore, D1 also discloses that the gas nozzle has an artificially produced patina oxide layer at least on a partial area of the surface.</p> <p>The subject matter of claim 1 is not novel (PCT Article 33(2)). D2 also describes the subject matter of claim 1 (see in particular the whole of page 3 of said document).</p> <p>In any event, D3 discloses a gas nozzle, from which the subject matter of claim 1 differs by virtue of the features defined in the characterizing clause of claim 1. This oxide layer allows an oxide layer which is stable with respect to the atmosphere.</p>		

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Box No. V      Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

However, these features have already been used for the same purpose in a similar copper part, cf. in this respect D3 or D4 (see the passages of these documents cited in the search report). If a person skilled in the art wishes to achieve the same aim in a copper part as per document D3, he could easily apply these features to like effect to the subject matter of D4 or D5. In this way he would arrive at a gas nozzle as per claim 1 without thereby being inventive.

V.2.2 Claim 2 includes all the features of claim 1. D1, D2 or D3 also describe a welding torch in which a plurality of parts, i.e. the nozzle, the contact tube, etc., consist of copper or a copper alloy.

The subject matter of claim 1 is therefore not novel versus D1 or D2 or not inventive versus D3 (PCT Article 33(3)).

V.2.3 Dependent claims 3-4 do not contain any features which, in combination with the features of any claim to which they refer back, meet the PCT requirements for novelty and inventive step (Article 33(2-3)); cf. either D1, D2, D4 or D5 for claim 4; conventional measure for a person skilled in the art for a greater thickness of the oxide layer for claim 3.

V.3 Second invention, i.e. claims 5-18

V.3.1 Document D6 discloses (the references in

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

(parentheses relate to said document) a cleaning device (figures 1, 3-7) suitable for a welding torch in accordance with the preamble of claim 5. Furthermore, D6 discloses that the bristles (20) of the brush (10) are made of a very soft elastic material, i.e. of plastic, and that abrasive grains are embedded in the bristles (20) (column 5, lines 51-67).

The subject matter of claim 5 is therefore not novel (PCT Article 33(2)). D7-D10 also disclose the subject matter of claim 5 (see the passages of these documents which are of relevance and cited in the search report).

V.3.2 The dependent claims 6-18 do not contain any features which, in combination with the features of any claim to which they refer back, meet the PCT requirements for novelty and inventive step (PCT Article 33(2-3)); cf. D6 for claims 7-14, 16 and 18; cf. D7 for claims 7-12, 14, 16 and 18; cf. D8 for claims 7-14, 16, 18; cf. D9 for claims 5-7, 8-12, 17-18; cf. D10 for claims 7, 9-12, 16-18; conventional measure for a person skilled in the art for claim 15.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

VIII.1 Claims 1 and 2 are not clear (PCT Article 6).

Both claims actually state that a part of a welding torch has an artificially produced patina layer at least on a partial area of the surface. This phrase is vague and unclear and leaves the reader uncertain as to the meaning of the technical feature in question.

It is clear from the description (page 4, 4th paragraph and page 9) that this patina layer is merely an artificially produced oxide layer, i.e. a special chemical process is used to produce oxides from the base material of the part.

The present opinion examines claims 1-2 with the following additional definition (cf. points V.2.1-2):

Claim 1 or 2: ... has an artificially produced patina oxide layer.

VIII.2 Although claims 1-2 are drafted as separate independent claims, they seem in fact to relate to the same subject matter. Claim 2 should be defined as a dependent claim referring back to claim 1, since claim 2 includes all the features of claim 1.

For this reason, the claims are not concise and do not meet the requirements of PCT Article 6.

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Box No. VIII Certain observations on the international application

In the present opinion, claim 2 is examined as a claim that is dependent on claim 1.

VIII.3 Claims 7 and 9-12 are not clear (PCT Article 6).

Claim 7 actually defines a relative dimension of the brush with respect to a workpiece which is not included in the subject matter of claim 7, i.e. the welding torch. The applicant should therefore amend claim 7 in such a way that the diameter of the brush can be larger than the diameter of the welding torch. Claim 7 is examined in this way in the present opinion (cf. point V.3.2).

Claims 9-12 are not defining a feature of the brush, but rather are more defining process steps used to clean a welding torch. The applicant should either delete these claims or define an additional independent process claim for cleaning a welding torch comprising these steps.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Box IV

IV.1 The various groups of inventions are:

- (I) Claims 1-4: Gas nozzle and welding torch with an oxide coating for reducing the adhesion of spatters
- (ii) Claims 5-18: Cleaning device for a welding torch which significantly improves the cleaning quality.

For the following reasons, these inventions are not so linked as to form a single general inventive concept (PCT Rule 13.1):

IV.2 The search resulted in the following prior art which is of relevance to assessing the unity of invention:

Group I: claims 1-4

Group II: claims 5-18

Document DE-A 195 07 472 (D0-1) discloses a gas nozzle for a welding torch which consists of copper or a copper alloy (page 1, line 26). Furthermore, D0-1 also discloses a welding torch which is equipped with a gas nozzle, a nozzle assembly and a contact tube, the gas nozzle and/or the nozzle assembly and/or the contact tube consisting of copper or a copper alloy (page 1, lines 3-8 and 26),

Supplemental Box

i.e. D0-1 discloses the features defined in the preamble of claims 1 and 2.

Document D0-2 (DE-A 44 26 303) discloses a cleaning device for a welding torch, having a brush provided with bristles, for cleaning welding spatters off the welding torch, i.e. D0-2 discloses the features defined in the preamble of claim 5.

IV.3 A comparison of the present groups of claims with documents D0-1 and D0-2 reveals that the following features make a contribution to the prior art and can therefore be regarded as particular technical features under PCT Rule 13.2:

Group I: the gas nozzle or the gas nozzle and/or the nozzle assembly and/or the contact tube has/have an artificially produced patina layer at least on a partial area of the surface of these parts

Group II: the bristles of the brush are made of a very soft elastic material, and abrasive grains are embedded in said bristles.

The following can be regarded as problems solved by the particular technical features:

Group I: reducing the adhesion of spatters on welding torches (page 3, final paragraph - page 4, first paragraph)

Group II: providing a cleaning device for a welding torch in which the cleaning quality is significantly improved

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Supplemental Box

(page 4, first paragraph)

These problems are distinct from one another. Therefore, unity of invention between the abovementioned groups of claims in accordance with PCT Rules 13.1 and 13.2 is absent both with regard to the particular technical features and with regard to the problems solved.